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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/714,692	11/17/2003	Meinrad Gotz	2347.001	5376

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EXAMINER	
BOOSALIS, FANI POLYZOS	
ART UNIT	PAPER NUMBER
2884	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/18/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/714,692	GOTZ ET AL.	
	Examiner	Art Unit	
	Faye Boosalis	2884	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 October 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-61* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *21-27,30-35,44,47,49,50,52 and 54-56* is/are allowed.

6)☒ Claim(s) *1-4,6-14,16-20,28,29,36-43,45-46,48,51,53 and 57-60* is/are rejected.

7)☒ Claim(s) *5,15 and 61* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/10/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendment submitted 10 October 2006 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 1-2, 36-38, 40,42, 43 and 45 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 36-37, 40-43 and 57 are rejected under 35 U.S.C. 102(b) as being anticipated by *Everest et al (US 4,494,881 A).*

5. Regarding claim 36, Everest discloses a radiometer (10), comprising: an IR sensor (col. 4, lines 23-24); a lens being arranged with respect to the detector such that the lens (32) focuses radiation from a measuring surface (22) to the detector (34) (See Fig. 2); and a light source for emitting visible light for marking the measuring surface (22) (col. 4, lines 43-50); and marking providing a visible indication based upon a reading of the detector (col. 9, lines 15-27 and col. 10, lines 1-10).

Regarding claims 37, 40, 41-43 and 57, Everest discloses a deviating means in the proximity of the optical axis, is adapted to deviate the beam path of the visible light (col. 9, lines 25-27 and col. 10, lines 1-2).

6. Claims 51 and 58 are rejected under 35 U.S.C. 102(b) as being anticipated by *McKinley et al (EP 0867699 A2)*.

Regarding claim 51, McKinley discloses a method for a radiometer (10), comprising: focusing IR radiation emitted by a measuring surface by means of a lens on an IR detector; determining a temperature of the measuring surface on the basis of a signal supplied by the IR detector marking the measuring surface by visible light; and indicating with the marking at least one of a measured state and a change of temperature based upon the determined temperature (col. 5, lines 10-30). Indicating a temperature change in a "measured state" was interpreted in the broadest meaning and therefore, McKinley indicates a change in surface temperature, by measuring the temperature surface after the surface energy zone is visibly outlined by a laser beam.

Regarding claim 58, McKinley discloses marking the measured surface by visible light comprising guiding the light through the lens (col. 3, lines 44-48).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1-2, 6 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Everest et al (US 4,494,881 A)* in view of *Carrieri et al (US 6,060,710 A)*.

Regarding claims 1-2, 6 and 45, Everest discloses a method and sighting device for a radiometer (10) for visibly marking a measuring surface (22), the temperature of

which is measured by a radiometer (10) (col. 4, lines 51-58), comprising: a light source for emitting a visible light beam marking the measuring surface (22) (col. 4, lines 43-50); and optical lens apparatus for controlling direction of the light beam (col. 9, lines 25-27 and col. 10, lines 1-2). Everest does not disclose the use of a piezoactuator for controlling the light beam. Carrieri discloses an apparatus for sensing and identifying a material comprising; a light source (122) and a radiometer (PR)(180) and a piezoactuator for controlling the direction of the light beam (col. 6, lines 13-14). Carrieri teaches piezoceramic actuators with driver circuits control beam modulation (col. 6, lines 13-14). Therefore, it would have been obvious to a person having ordinary skill in the art to modify Everest to use a piezoactuator as a means for controlling the emitted light beam as disclosed supra by Carrieri.

Regarding claim 2, although neither Everest nor Carrieri disclose a piezo-bending actuator, it would have been obvious to a person having ordinary skill in the art as a matter of routine design choice, to modify Everest and Carrieri to use a piezo bending actuator to provide for various means of controlling the emitted light beam.

Regarding claim 6, although neither Everest nor Carrieri disclose an actuator comprising an X and a Y actuator, it would have been obvious to a person having ordinary skill in the art to modify Everest and Carrieri to use an X and Y actuator to control a light beam in two dimensions.

9. Claims 3-4, 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Everest et al (US 4,494,881 A)* and *Carrieri et al (US 6,060,710 A)* as applied to claim 1 above, and further in view of *Prekel et al (US 5,841,138 A)*.

Regarding claim 3, *E*verest and Carrieri disclose all of the limitations of the parent claim 1, as described above. However, *E*verest and Carrieri are silent with regards to providing segmented mirrors. Perkel discloses of a nondestructive and contact-free testing of material by means of thermal excitation of surfaces comprising a segmented mirror (22) for driving the light beam (S) by the light source into a plurality of beams (col. 4, lines 14-22). Perkel teaches the mirror (22) is formed with recesses or cuts, and it is either rotated continually or moved back and forth in oscillating motions between two defined angular positions. The excitation beam S hitting the mirror surface is transmitted, if it happens to meet a recess, or it is deflected by reflection, all depending on the position of the mirror. In a preferred embodiment the mirror is round and segments are cut out of its circumference at regular intervals (col. 4, lines 14-22). Therefore, it would have been obvious to a person having ordinary skill in the art to modify Everest and Carrieri, to use segmented mirrors to provide an alternative means of dividing the emitted light beam into a plurality of beams as disclosed supra by Perkel.

Regarding claim 4, Perkel discloses a nondestructive and contact-free testing of material by means of thermal excitation of surfaces comprising a mirror (70) attached to the piezoactuator (72), wherein the mirror (70) is adapted to be moved by the piezoactuator and wherein the mirror deviates the light beam to a segmented mirror (74), wherein the segmented mirror reflects the light beam to the measuring surface (col. 5, lines 45-67 and col. 6, lines 1-10).

10. Claims 7-11 and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Everest et al (US 4,494,881 A)* and *Carrieri et al (US 6,060,710 A)* as applied to claim 1 above, and further in view of *McKinley et al (EP 0867699 A2)*.

Regarding claim 7-10 and 59, *E*verest and Carrieri disclose all of the limitations of the parent claim 1, as described above. However, *E*verest and Carrieri are silent with regards to the attachment of the actuator to the light source. McKinley discloses measuring temperature using infrared techniques comprising: a light source (112) attached to an actuator (i.e. vibratory means) so the actuator can rotate the light source (col. 7, lines 18-29). McKinley teaches the laser (112) can be rotated by vibratory means. Rotation of the laser should be at a refraction angle which corresponds to the 90% energy zone E thereby permitting the laser beam (114) to rotate about the periphery of the energy zone E to make it visible to the user of the radiometer (10) (col. 7, lines 18-29). Therefore, it would have been obvious to a person having ordinary skill in the art to modify Everest and Carrieri, to attach the actuator to the light source as an alternative arrangement to derive a controlled light beam as disclosed supra by McKinley.

Regarding claim 11, McKinley discloses directing light beam stepwise to mark and measure the surface with marks or points (col. 6, lines 42-58 and col. 7, lines 1-2).

11. Claims 12, 16 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Everest et al (US 4,494,881 A)* and *Carrieri et al (US 6,060,710 A) and* in view of Brandli et al (US 3,924,469).

Regarding claims 12 and 46, Everest discloses a method and sighting device for a radiometer (10) for visibly marking a measuring surface (22), the temperature of which is measured by a radiometer (10) (col. 4, lines 51-58), comprising: a light source for emitting a visible light beam marking the measuring surface (22) (col. 4, lines 43-50); and optical lens apparatus for controlling direction of the light beam (col. 9, lines 25-27 and col. 10, lines 1-2). Carrieri discloses an apparatus for sensing and identifying a material comprising; a light source (122) and a radiometer (PR)(180) and a piezoactuator for controlling the direction of the light beam (col. 6, lines 13-14). However, *E*verest and Carrieri are silent with regards to a coil mounted for varying direction of the light beam. Brandli discloses an apparatus for measuring the temperature at the surface of an object by measuring of infrared radiation emitted form the surface comprising: an actuator for controlling a direction of the light beam; the actuator comprising a coil mounted for varying the direction of the light beam and the positioned to move the coil in response to current flow through the coil wherein the means varies the direction of the light beam (col. 3, lines 44-65). Brandli teaches the projection of the ellipse to the surface of object (4) to be measured is approximately circular, like the projection onto any plane at a right angle thereto. Therefore, shaft (3a) and the reflective plate-like member rotate, infrared radiation from the surface of the object (4) and from the wall le of the cavity (1a) will be admitted in alternation to the detector (5) via the radiation conductor (6). In lieu of rotation of the plate-like reflecting member (2) continuously in one direction, the same desired effect can be established by oscillation of the member (2) about the axis of shaft (3a) through an angle in the range.

between 60 degree and 180 degree between two terminal positions with the drive for shaft (3a) being accomplished through pneumatically, hydraulically or electro-magnetically actuated motor means. (3). A heating coil (7) surrounds the periphery of the compensating radiator (1) for heating the latter, its power supply being controlled by an electronic control circuit, known per se and therefore not illustrated here, which receives the output signal from the infrared detector (5) in the form of a controlling pulse (col. 3, lines 44-65 and col. 4, lines 1-18). Therefore, it would have been obvious to a person having ordinary skill in the art to modify Everest and Carrieri to include a coil mount as a means of varying the direction of the light beam as disclosed by Brandli.

Regarding claim 16, although Everest, Carrieri nor Brandli disclose an actuator comprising an X and a Y actuator, it would have been obvious to a person having ordinary skill in the art to modify Everest, Carrieri and Brandli to use an X and Y actuator to control a light beam in two dimensions.

12. Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Everest et al (US 4,494,881 A), Carrieri et al (US 6,060,710 A) and Brandli et al (US 3,924,469)* as applied to claim 12 above, and further in view of *Prekel et al (US 5,841,138 A).*

Regarding claims 13-14, *E*verest, Carrieri and Brandli disclose all of the limitations of the parent claim 12, as described above. However, *E*verest, Carrieri and Brandli are silent with regards to segmented mirror. Perkel discloses a nondestructive and contact-free testing of material by means of thermal excitation of surfaces comprising a mirror (70) attached to the piezoactuator (72), wherein the mirror (70) is

adapted to be moved by the piezoactuator and wherein the mirror deviates the light beam to a segmented mirror (74), wherein the segmented mirror reflects the light beam to the measuring surface (col. 5, lines 45-67 and col. 6, lines 1-10). Perkel teaches the mirror (22) is formed with recesses or cuts, and it is either rotated continually or moved back and forth in oscillating motions between two defined angular positions. The excitation beam S hitting the mirror surface is transmitted, if it happens to meet a recess, or it is deflected by reflection, all depending on the position of the mirror. In a preferred embodiment the mirror is round and segments are cut out of its circumference at regular intervals (col. 4, lines 14-22). Therefore, it would have been obvious to a person having ordinary skill in the art to modify Everest, Carrieri and Brandli, to use segmented mirrors to provide an alternative means of dividing the emitted light beam into a plurality of beams as disclosed supra by Perkel.

13. Claims 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Everest et al (US 4,494,881 A), Carrieri et al (US 6,060,710 A) and* Brandli et al (US 3,924,469) as applied to claim 12 above, and further in view of *McKinley et al (EP 0867699 A2)*.

Regarding claims 17-18, *E*verest, Carrieri and Brandli disclose all of the limitations of the parent claim 12, as described above. However, *E*verest, Hollander, Carrieri and Brandli are silent with regards to the attachment of the actuator to the light source. McKinley discloses measuring temperature using infrared techniques comprising: a light source (112) attached to an actuator (i.e. vibratory means) so the actuator can rotate the light source (col. 7, lines 18-29). McKinley teaches the laser

(112) can be rotated by vibratory means. Rotation of the laser should be at a refraction angle which corresponds to the 90% energy zone E thereby permitting the laser beam (114) to rotate about the periphery of the energy zone E to make it visible to the user of the radiometer (10) (col. 7, lines 18-29). Therefore, it would have been obvious to a person having ordinary skill in the art to modify Everest and Carrieri, to attach the actuator to the light source as an alternative arrangement to derive a controlled light beam as disclosed supra by McKinley.

Regarding claims 19-20, McKinley discloses the sighting device wherein the light beam guides in a circular pattern (col. 8, lines 31-40) and the stepwise change of the direction of the light beam is accomplished by a sectorized mirror (col. 6, lines 42-58 and col. 7, lines 1-2).

14. Claims 28-29, 48 and 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Everest et al (US 4,494,881 A)* in view of *Prekel et al (US 5,841,138 A).*

Regarding claims 28 and 48, Everest discloses a method and sighting device for a radiometer (10) for visibly marking a measuring surface (22), the temperature of which is measured by a radiometer (10) (col. 4, lines 51-58), comprising: a light source for emitting a visible light beam marking the measuring surface (22)) (col. 4, lines 43-50); and optical lens apparatus for controlling direction of the light beam (col. 9, lines 25-27 and col. 10, lines 1-2). Everest does not disclose sectorized mirror. Perkel discloses of a nondestructive and contact-free testing of material by means of thermal excitation of surfaces comprising a sectorized mirror (22) upon which the light beam falls; the mirror

causing a stepwise change of direction of light into a plurality of beams (col. 4, lines 14-22). Perkel teaches the mirror (22) is formed with recesses or cuts, and it is either rotated continually or moved back and forth in oscillating motions between two defined angular positions. The excitation beam S hitting the mirror surface is transmitted, if it happens to meet a recess, or it is deflected by reflection, all depending on the position of the mirror. In a preferred embodiment the mirror is round and segments are cut out of its circumference at regular intervals (col. 4, lines 14-22). Therefore, it would have been obvious to a person having ordinary skill in the art to modify Everest, to include sectorized mirrors to cause change of direction to the light beam an alternative means of directing the emitted light beam as disclosed supra by Perkel.

Regarding claims 29 and 60, although Prekel does not disclose the sectorized mirror comprising three concave sectors, Prekel does disclose the sighting device comprises mirrors (28)(30) as well as lenses (42)(44) and the lenses may also be concave mirrors.

15. Claims 38-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Everest et al (US 4,494,881 A)* as applied to claim 37 above, and further in view of Hollander et al (US 5,368,392 A).

Regarding claims 38-39, *E*verest discloses all of the limitations of the parent claim 37, as described above. However, *E*verest is silent with regards to deflecting light at different angles. Hollander discloses a radiometer comprising a prism to deflect the emitted light beam (col. 6, lines 1-5). Hollander teaches prisms can be used in place of a mirror with predetermined angles to cause the prism to function as a reflecting mirror

surface and direct the laser beam about the perimeter of the energy zone (col. 6, lines 1-5). Therefore, it would have been obvious to a person having ordinary skill in the art to modify Everest, to include a prism, as an alternative means to a mirror, to deflect the laser beam about different angles as disclosed supra by Hollander.

Allowable Subject Matter

16. Claims 21-27, 30-35, 44, 47, 49, 50, 52, 54-56 were indicated allowable in the previous Office Action on 6 July 2006 and new claims 54-56 are allowable based on their dependency.

17. Claims 5 and 15 were object to, as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, in the previous Office Action on 6 July 2006.

18. Claim 61 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

19. Regarding dependent claim 61, the prior art, as stated supra, does not disclose or fairly suggest of a method comprising: reflecting visible light from outer surface upon measuring surface wherein the lens being inclined versus the optical axis so that the first reflected portion of the IR radiation encountering an outer side of the lens is smaller than a second reflected portion of the light of the light source encountering the outer side of the lens.

Conclusion

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Faye Boosalis whose telephone number is 571-272-2447. The examiner can normally be reached on Monday thru Friday from 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

22. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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